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AUTHOR Kellogg, Ronald T.; And Others
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ABSTRACT

A study investigated whether the narrative writing task is more compatible with the structure of conscious thought than are other writing tasks. If so, composing a narrative text should demand less cognitive effort, occur more fluently, and yield a more coherent document than composing persuasive or descriptive texts. Sixteen college students were assigned randomly to each of 3 composition types: narrative, descriptive, or persuasive. Two texts were composed by each participant, one in longhand and one on a word processor. The students wrote on the subjects of test-taking and drinking. Analyses of secondary task reaction times and subjective ratings confirmed that narrative writing is least effortful. An analysis of coherence ties and words produced per minute indicated that persuasive writing exhibits the least cohesion and fluency. The study is continuing, and will examine reading effort, comprehension level, and recall level for the texts that have already been written. (Thirteen figures are included.) (PRA)

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The Relative Ease of Writing Narrative Text

Ronald T. Kellogg, Merilee Krueger, and Rose Blair

University of Missouri-Rolla

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Abstract

The narrative writing task, we hypothesize, is most compatible with the structure of conscious thought. Hence, composing a narrative text should demand less cognitive effort, occur more fluently, and yield a more coherent document than composing persuasive and descriptive texts. Analyses of secondary task reaction times and subjective ratings confirmed that narrative writing is least effortful. An analysis of coherence ties and words produced per minute indicated that persuasive writing exhibits the least cohesion and fluency.

The Relative Ease of Writing Narrative Text

My paper today relates to a growing literature on the narrative aspects of human cognition. Jerome Bruner (1990) recently reminded us in his book Acts of Meaning that the study of narratives has a long and significant history in our sister disciplines of linguistics, anthropology, and philosophy, as well as literature and composition. Cognitive psychologists to date have focused on the importance of narrative schemata in reading comprehension and memory (Mandler, 1984; Einstein, McDaniel, Owen, & Cote, 1990), in the production of oral discourse (Chafe, 1990), and in the thinking processes of jurors reaching legal decisions (Pennington & Hastie, 1988). Our research examined the thinking processes involved in the production of written discourse.

The central idea motivating our study is what we refer to as the principle of constructive narration. This principle assumes that narration is much more central to human cognition than current theories in our field suggest. Specifically, the principle holds that the contents of conscious thought are constructed by a generalized narrative schema. We tell ourselves stories, moment by moment, about the events perceived, recalled, and imagined in our lives. A person's life story is continually revised as new chapters dynamically unfold with age and development. The narrative schema, for most individuals most of the time, habitually interprets the events of perceptual, memorial, and imaginal

experience. It selects and organizes the events that are significant to the individual (Leondar, 1977).

Bruner (1990) contrasted the narrative mode of thought with the paradigmatic mode. The latter is guided by a hypothetico-deductive or persuasive schema, such as that required in legal, scientific, and, on increasingly rare occasions, political discourse. With special training, we suggest, the paradigmatic or persuasive mode can become dominant. That is, a persuasive schema can structure conscious content for some individuals in some situations. Graduate and professional schools aim to cultivate the paradigmatic mode, as exemplified by the law school refashioning the student to "think like a lawyer." But, the typical course of cognitive development, we believe, results in a narrative schema habitually structuring the contents of consciousness (Lucariello, 1990).

We propose that the cognitive processing of narratives texts, both in comprehension and production, enjoy a special advantage relative to other types because such texts are highly compatible with the typical, habitual structure of conscious thinking. For example, the task of writing narrative texts should be more compatible than writing either descriptive or persuasive texts. The sequential events of a narrative text should be easier to generate and organize than the static events, relations, and arguments of either descriptive or persuasive texts, given the assumption that the structure of conscious thought is typically narrative in

form.

We expected support for our narrativity hypothesis on three fronts. First, measurements of the cognitive effort demanded by composing should reveal that narrative texts are less effortful than descriptive and persuasive texts. Both subjective ratings collected after the experiment and secondary task reaction times collected during composition indexed cognitive effort in our study.

I have previously reported that writing is an extraordinarily effortful cognitive task relative to other tasks typically studied in the laboratory (Kellogg, 1986). Moreover, McCutchen (1986) argued that the complex interactions among composing processes precludes writing from ever being automatic, in the sense of wholly effortless, even for highly skilled experts. We anticipated, therefore, that narrative writing would only be relatively less demanding, not effortless and fully automatic.

Second, the habitual deployment of a narrative schema should support highly efficient or fluent narrative composition. We expected that the rate at which a writer can generate the words of a text should be greatest when composing a narrative relative to a descriptive or persuasive text. Words produced per minute (WPM) indexed fluency in our study.

Third, the cohesiveness of the resulting document should vary across type as well. Presumably, a narrative schema habitually interprets everyday experiences in an

effort to construct a coherent story. When this schema is turned to the thinking task of composing a narrative text, the establishment of coherent links between independent clauses ought to be facile. Descriptive and persuasive texts, which both focus heavily on non-sequential, static elements, cannot draw readily on the habitual narrative schema in constructing such coherent links. We adopted Haliday and Hasen's (1974) linguistic analysis of textual cohesiveness and examined local ties, remote ties, and unsuccessful attempts to establish ties (McCutchen, 1986).

We assigned randomly 16 college students to each of three composition types: narrative, descriptive, or persuasive. Two texts were composed by each participant, one in longhand and one on a word processor. The students wrote on test taking and drinking; both topics were not unfamiliar to college students and the drinking topic was previously used by Reed, Burton, and Kelly (1985). We also borrowed from Read et al. a dozen questions posed to the participants as a prewriting activity lasting 5 minutes. These questions prompted the writers to think about the topic in the form of a narrative, descriptive, or persuasive composition. We instructed the writers to use the questions as much as they wished, but to not feel compelled to answer all the questions in their written products. The topics and a sample of the prewriting questions are shown in Figure 1 through 6. The topic, order, and tool variables were counterbalanced in a greco-latin square design.

Insert Figures 1, 2, 3, 4, 5, and 6 here

We held the topics constant across composition types to avoid confounding type with the nature of the topic. To illustrate, students in the narrative condition gave a chronological account of an event that involved drinking or taking a test, depending on the topic. Those in the descriptive condition described a person and/or a place that was involved in drinking or taking a test. Finally, those in the persuasive condition took a stand for or against a proposition. In one case this was that the drinking age should be lowered to 18. In the other case, the proposition was that all graduating seniors must pass a test in their major field in order to graduate.

We measured cognitive effort through secondary task reaction times and subjective judgments. While the writers composed they heard on a random schedule an auditory signal from a computer. We instructed them to say "Stop" into a microphone, which triggered a relay to record their reaction time, as soon as they heard the signal. Then, they pressed a button labeled planning, translating, reviewing or other to indicate whether their thoughts at the moment of the signal focused on planning ideas, translating ideas into sentences, or reviewing plans or text generated thus far. They had been trained to identify their thoughts while writing as illustrating either one of these basic composing processes or

some other unrelated process. We also collected baseline reaction times before composition began to assess the degree of reaction time interference created by each writing process.

The degree of interference in reaction time, relative to baseline times obtained when the participants were not writing, reflected the cognitive effort devoted to the writing process. I show the means for reaction interference in milliseconds in Figure 7 as a function of composition type and composing process. Narrative writing demanded significantly less effort than both descriptive and persuasive writing, $F(2,39) = 3.27$, $p < .05$, across all three processes.

Insert Figure 7 here

The descriptive and persuasive tasks failed to differ reliably from each other overall and the process by composition type interaction was nonsignificant. These results clearly indicate that the cognitive effort required to write a narrative text is substantially less than for other text types. In addition, they imply that narrative composition is relatively easy as opposed to persuasive composition being exceptionally difficult.

After composing both texts we asked the participants to judge the overall difficulty of their writing tasks. In Figure 8 I show the mean ratings on a seven point scale with

one equaling not difficult and seven equaling very difficult. These reveal a clear step pattern with narratives easiest, descriptive texts intermediate, and persuasive texts the hardest. The composition type effect was reliable, $F(2,47) = 7.57$, $p < .01$. The subjective ratings support the view that narratives are easiest, but interestingly the writers rated persuasive texts as more difficult to compose than the descriptive texts.

Insert Figure 8 here

I show the fluency data in Figure 9. Persuasive composition proceeded at a slower pace, measured in words produced per minute, relative to both descriptive and narrative composition. This held for both longhand and computer-based composing. The main effect of composition type was the only reliable source of variance, $F(2,45) = 3.98$, $p < .05$.

Insert Figure 9 here

We analyzed the sentence to sentence connectedness of each text by counting coherence ties (Haliday & Hasen, 1976; McCutchen, 1986). Local ties connect adjacent independent clauses. An independent clause that is linked not only to the immediately preceding sentence or independent clause, but also to an earlier one, such as the topic sentence of a

paragraph, is scored as local. Remote ties connect one sentence and a previous one, but not the immediately preceding independent clause. Unsuccessful or failed ties occur when no connection is apparent or when the connection is too vague, such as ambiguous pronominal reference. These violate the Given-New contract of coherent discourse in that they fail to establish a link with given information and then provide new information.

An analysis of variance revealed a large effect of connection type, $F(2,45) = 249.57$, $p < .001$, with local connections outnumbering remote connections roughly by a factor of ten and outnumbering failed connections by a factor of one hundred. We conducted a separate analysis for each type of tie. We also examined if our coherence link analyses were confounded by the length of the texts produced in the various conditions. Because persuasive texts contained fewer words and sentences than descriptive and narrative texts, this possibility needed examination. However, the pattern of the data I will show you based on absolute numbers was unchanged when we examined ratios of the number of links per words, independent clauses, or sentences written.

Figure 10 provides the number of unsuccessful cases, multiplied by 100 to put them on a scale common to the remote and local links. The results show that narrative texts contained the fewest failed cases. Regardless of writing tool narratives yielded only half as many failed ties as descriptive texts. But persuasive texts overshadowed these

conditions. An ANOVA showed the composition type effect was reliable, $F(2,45) = 6.28$, $p < .05$.

Remote ties, those without any link to the preceding independent clause, rarely occurred. Only two or three appeared on average in narrative, descriptive, and persuasive texts and the minor differences were unreliable.

Insert Figure 10 here

Figure 11 portrays the means for local ties. Overall, the narrative texts contained more local ties than the persuasive texts. However, the descriptive texts contained just as many, if not more, local ties as the narratives. A separate ANOVA showed only a main effect of composition type $F(2,45) = 12.30$, $p < .001$.

Insert Figure 11 here

To summarize, our results indicate that narrative texts are written with less effort, with greater fluency, and with greater coherence than are persuasive texts. Performance on descriptive texts varied depending on the specific measure. As expected by the view that narratives are privileged, descriptive texts required more cognitive effort than narratives. But writing fluency and the cohesiveness of the resulting texts suggest that descriptive texts were comparable to narrative texts. The persuasive texts appeared

to be especially difficult for writers, judging from the fluency and coherence link analyses. This pattern of results occurred for texts written in longhand and on word processors. We did replicate a finding that I have previously reported that attentional involvement is greatest with a word processor, particularly when reading and editing text. But I do not have time to present the details on this effect.

Why do descriptive texts align with narratives in terms of fluency and cohesiveness and with persuasive texts in terms of effort? One clue is that the texts produced in our study included narrative elements more frequently in the descriptive condition than in the persuasive condition. Without knowledge of the condition assignment, a judge rated each text on a seven point scale in terms of the degree to which it (1) narrated a sequence of events, (2) described a person or event in detail, and (3) persuaded the reader to adopt a position on an issue.

The next slide (Figure 12) shows narrative ratings in the top row of the table for each type of composition. The effect of composition type was statistically reliable, $F(2,45) = 10.48$, $p < .001$, with descriptive documents showing more narrative elements than persuasive documents. As expected, narrative texts attained the highest narrative ratings. As the table also shows, ratings of how descriptive and how persuasive the text was indicated close similarities in the narrative and descriptive composition types. Thus,

the writers generated narratives with the least effort and greatest fluency and cohesiveness. But unlike effort the performance measures of writing fluency and textual cohesiveness are influenced by the actual elements that the writer includes in the text.

Insert Figure 12 here

We conclude that the narrative task is most compatible with the narrative schema that habitually constructs conscious content. But in retrospect the descriptive task, with additional effort, can also be fluently and cohesively performed using the narrative schema that habitually organizes consciousness. With descriptive compositions the writer must concentrate more to attain the high level of fluency and cohesiveness that obtains relatively effortlessly with narrative compositions. The persuasive composition, in contrast, cannot attain a high degree of fluency and cohesiveness even with extra effort. It demands the use of a persuasive schema or, in Bruner's (1990) terms, a paradigmatic mode of thought. Unless the writer has been educated in the persuasive mode of thinking and is capable of fluid shifts between narrative and persuasive schemata, then argumentative writing ought to be especially challenging.

Insert Figure 13 here

The principle of constructive narration contends that

reading, as well as writing, narratives should be privileged. Certain studies on reading different types of text challenge this view (Britton, Graesser, Glynn, Hamilton, & Penland, 1983), as does some Johnsonian folklore. Samuel Johnson quipped that "What is written without effort is in general read without pleasure." Dr. Johnson may be on the mark in comparing alternative texts of the same type. But for comparisons across types of compositions we expect to find that narratives are read with pleasure despite the lessened effort needed to write them relative to expositive, descriptive, and persuasive types of compositions. We are now in the process of examining reading effort, comprehension level, and recall level for the texts written in the study I described today. Our ultimate goal is to understand the role of narration not only in writing and reading but in other cognitive tasks as well.

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Figure Captions

Figure 1-6. Samples of topics and prewriting questions for narrative, descriptive, and persuasive conditions.

Figure 7. Mean cognitive effort based on secondary task reaction time interference (msec) for planning, translating, and reviewing.

Figure 8. Mean subjective effort based on ratings of overall task difficulty.

Figure 9. Mean fluency based on words produced per minute.

Figure 10. Mean number of failed coherence ties (x100).

Figure 11. Mean number of local coherence ties.

Figure 12. Mean ratings of narrative, descriptive, and persuasive text elements.

Figure 13. Some Johnsonian folklore.

NARRATIVE

Give a chronological account of an event that involved taking a test.

What has occurred?

What are some words that specifically describe this event?

Who was involved in this event?

How did the people involved in this story cause or contribute to it?

Why is this story important to you?

DESCRIPTIVE

Describe a person and/or place that was involved in taking a test.

Who is the person or what is the place?

What are some words that specifically describe this person or place involved?

Who else was involved with this person or place during this incident?

How did these people contribute to the person or place involved in the incident? Specifically describe these people?

Why is this particular person or place involved in the incident important to you?

PERSUASIVE

Take a stand for or against the following statement:

All graduating seniors must pass a test in their major field in order to graduate.

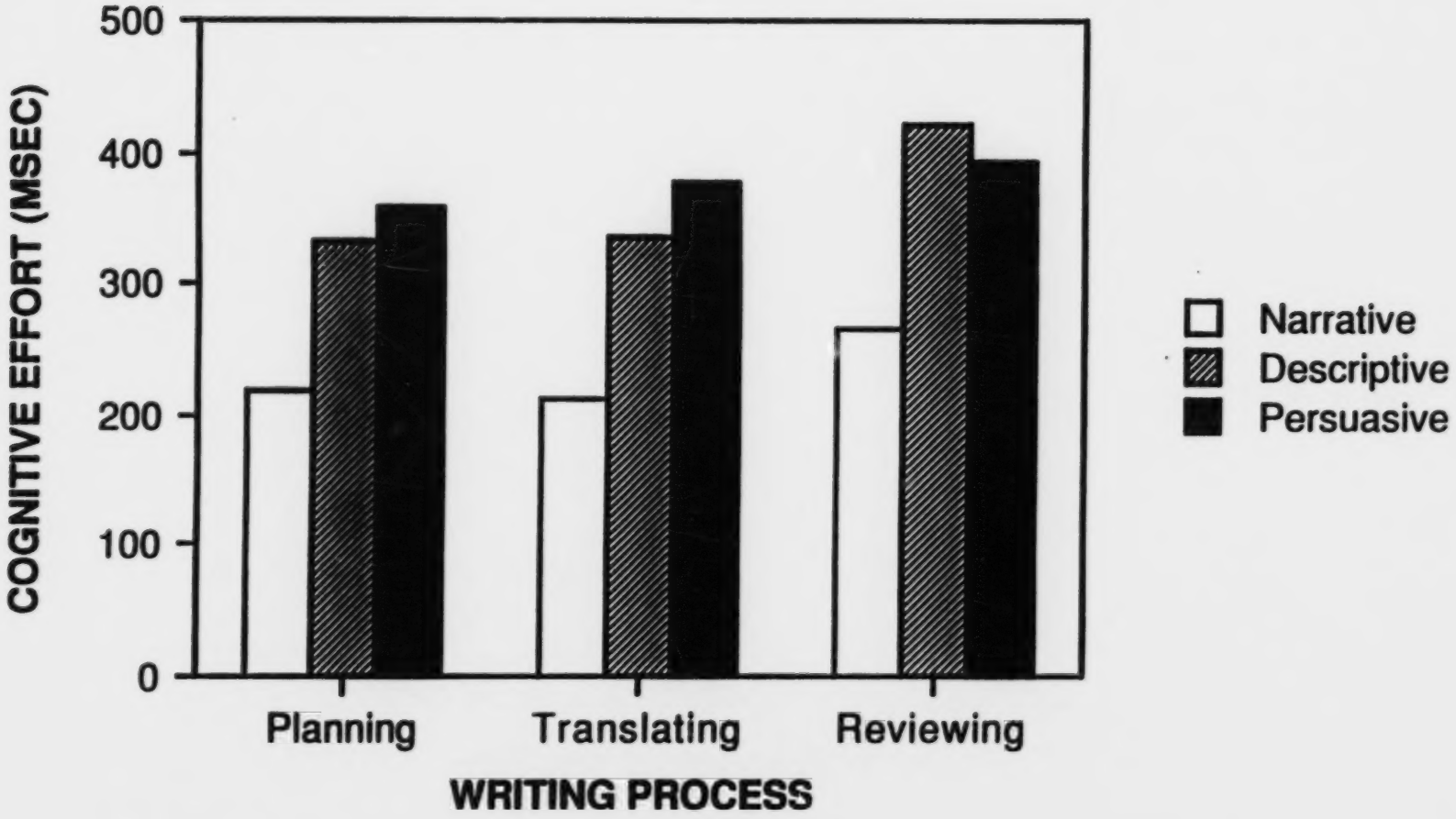
What is the issue?

What are some words that specifically describe this controversy?

Who is/was involved in this controversy?

How did the people involved in this controversy cause or help cause it?

Why is this issue important to you?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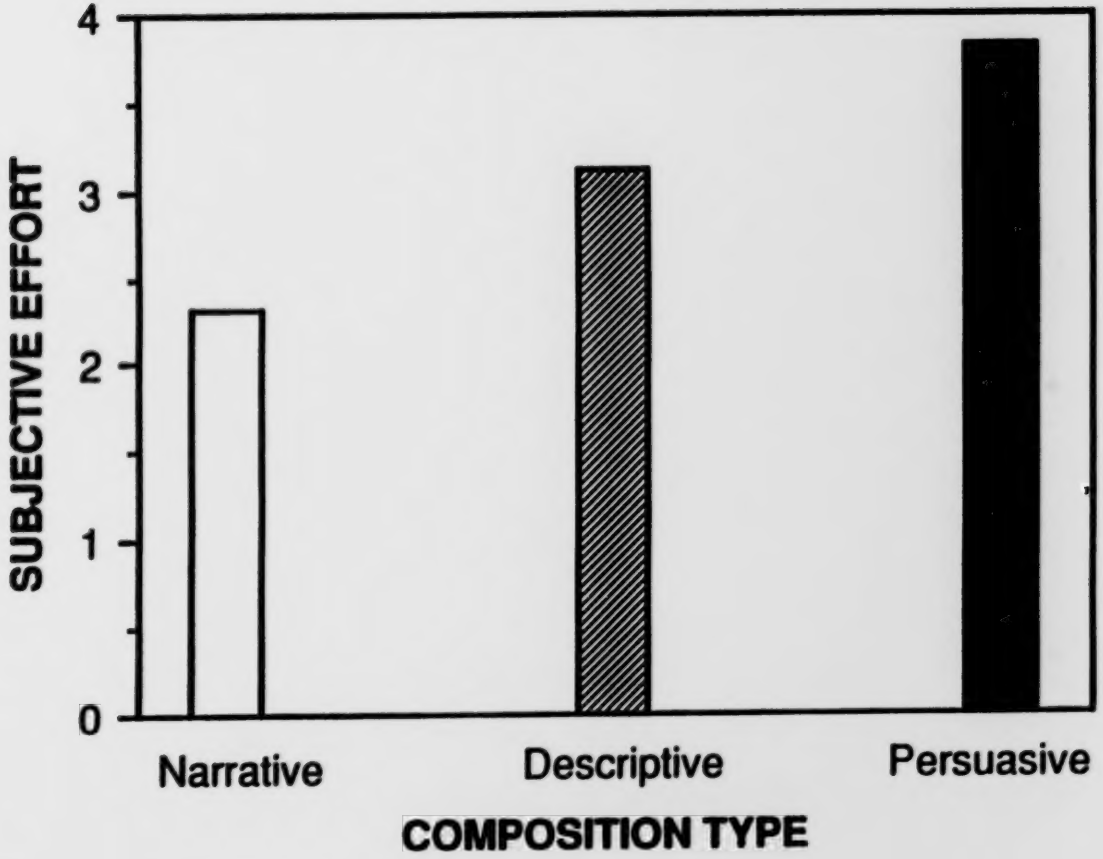
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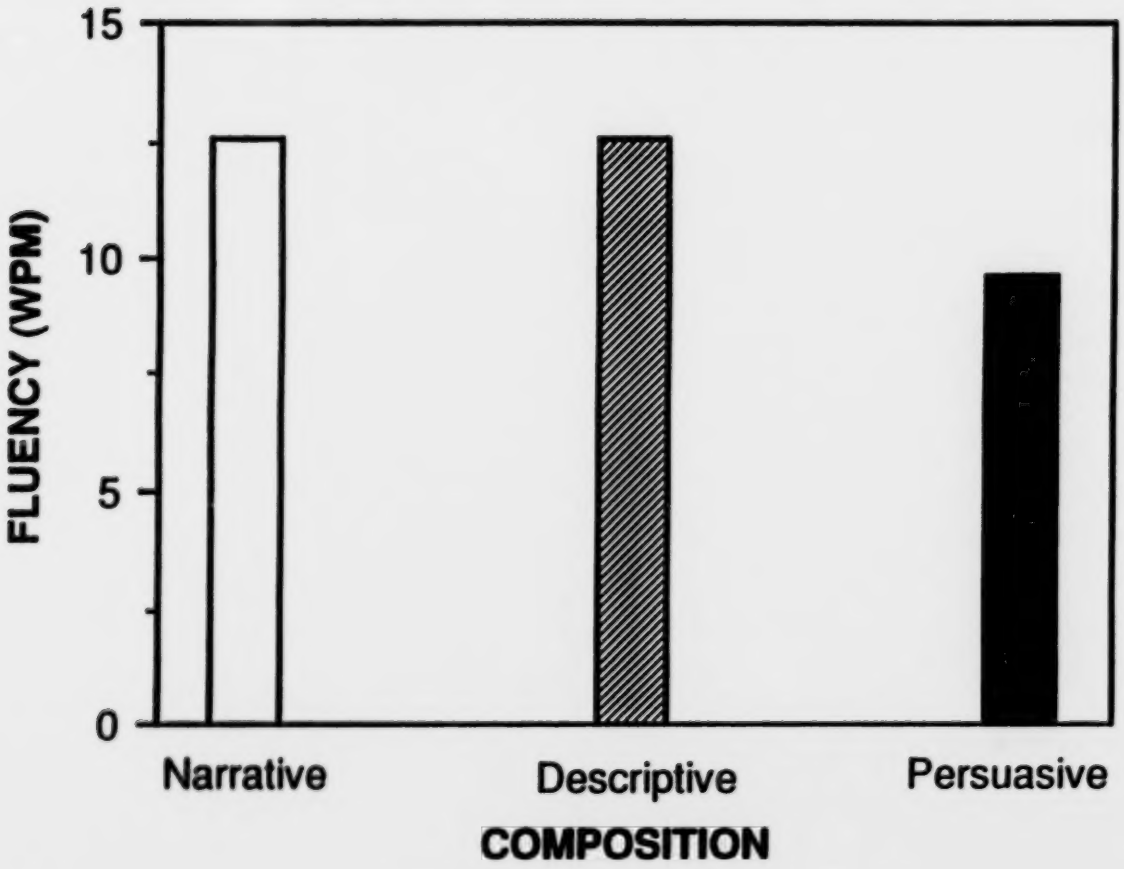
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FLUENCY (WPM)
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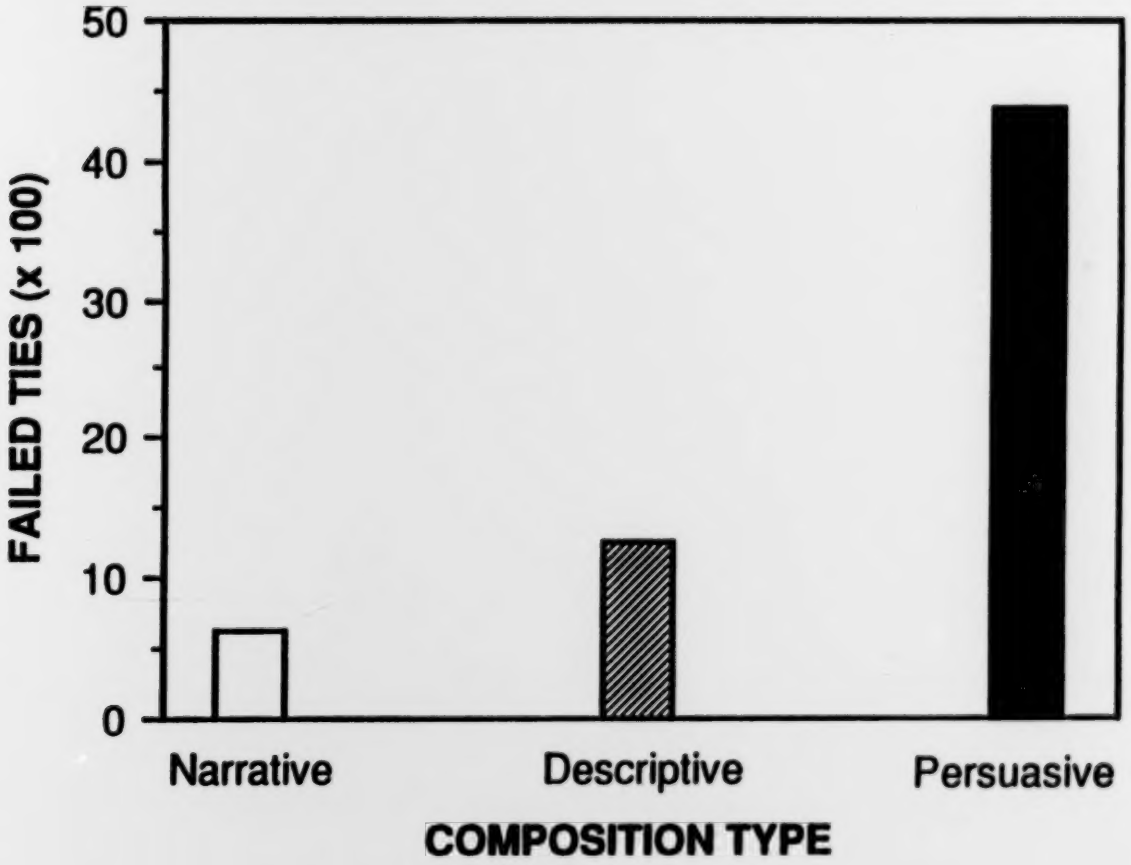
Descriptive
Persuasive
COMPOSITION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FAILED TIES (x 100)
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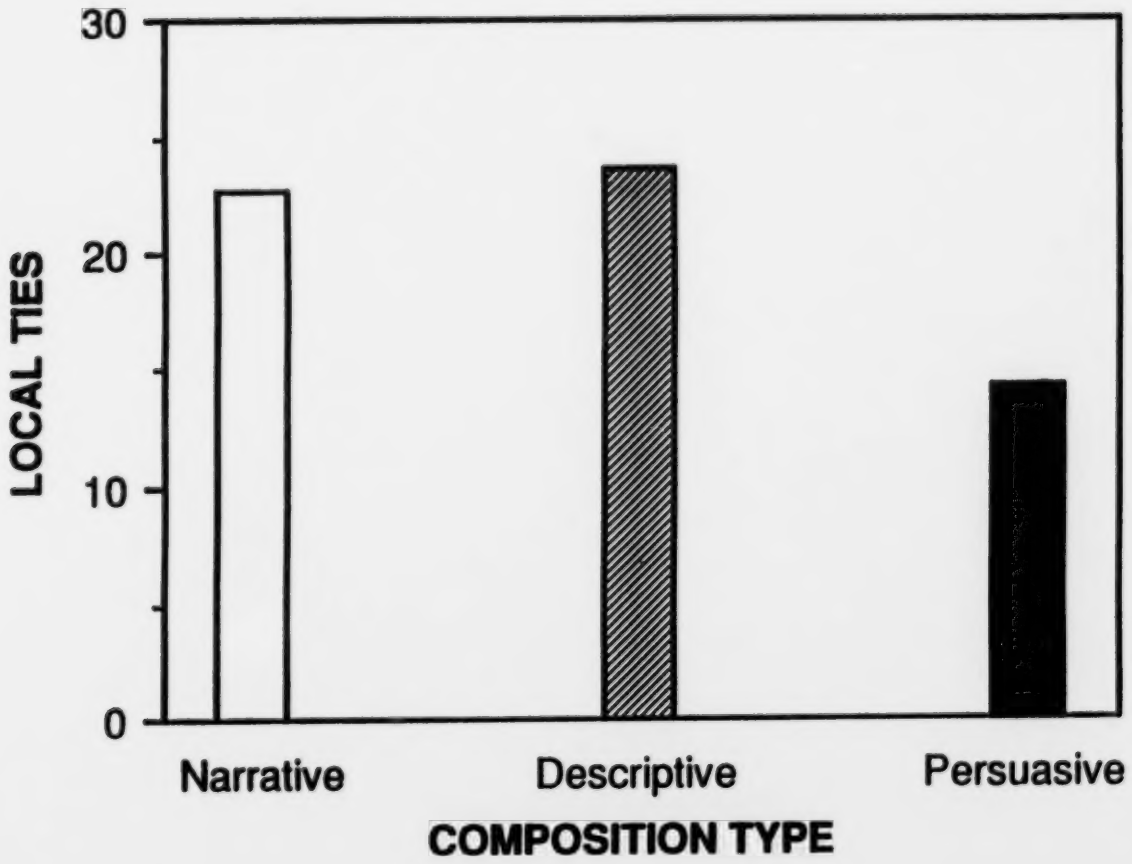
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LOCAL TIES
Narrative
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COMPOSITION TYPE

	Composition Type		
Rating Type	Narrative	Descriptive	Persuasive
Narrative	3.4	2.3	1.0
Descriptive	4.5	5.9	1.2
Persuasive	1.2	1.1	6.6

Note. Ratings are based on a 7-point scale with 1 = low and 7 = high in terms of the degree to which the text (1) narrated a sequence of events, (2) described a person or event in detail, (3) persuaded the reader to adopt a position on an issue.

"What is written without effort is in general read without pleasure."

Samuel Johnson